CLAIMS

1. A method for mirroring data of a first storage area, comprising:

placing a second storage area in a first state wherein updates to the first storage area are made to the second storage area;

mirroring data from the first storage area to the second storage area;

changing a state of the second storage area from the first state to a second state in which updates to the first storage area are not made to the second storage area; and

restoring data to the first storage area from the second storage area while maintaining the second storage area in the second state.

2. The method according to claim 1, further comprising writing, only to the first storage area, any data received during the act of restoring.

3. The method according to claim 1, further comprising maintaining, after the act of restoring is complete, the second storage area in the second state.

4. The method according to claim 1, further comprising;

receiving a read request issued by a host; and

reading, during the act of restoring, data from the second storage area in response to the read request when the data has not been restored to the first storage area.

5. The method according to claim 1, wherein the act of changing further comprises allowing the second storage area to be accessed independently from the first storage area.

6. The method according to claim 1, wherein the act of restoring includes performing an incremental restore of data from the second storage area to the first storage area.

7. The method according to claim 1, wherein the act of restoring includes performing a full restore of data from the second storage area to the first storage area.

8. The method according to claim 5, further comprising assigning an address to the second storage area, the second storage area being capable of being accessed through the address independently from an address of the first storage area.

9. The method according to claim 1, wherein the first storage area and second storage area are respectively located on first and second logical volumes of a storage system.

10. The method according to claim 1, further comprising indicating whether data has been restored to the first storage area from the second storage area.

11. The method according to claim 4, further comprising restoring data read from the second storage area to the first storage area.

12. The method according to claim 1, wherein at least one of the placing, mirroring, changing, and restoring acts is initiated by a command issued at a host computer.

13. The method according to claim 1, wherein, after the changing act, the second storage area contains a snapshot of data of the first storage area at a given time, and wherein the method further comprises:

updating, after the restoring act is complete, data within the first storage area such that the updated data within the first storage area is different from the snapshot of data; and

restoring, from the second storage area, the snapshot data to replace the updated data within the first storage area.

14. A storage system comprising:

a first storage area;

a second storage area; and

at least one controller that:

places the second storage area in a first state wherein updates to the first storage area are made to the second storage area;

mirrors data from the first storage area to the second storage area;

changes a state of the second storage area from the first state to a second state in which updates to the first storage area are not made to the second storage area; and

restores data to the first storage area from the second storage area while maintaining the second storage area in the second state.

15. The system according to claim 14, wherein the controller writes, only to the first storage area, any data received during restoring of data to the first storage area.

16. The system according to claim 14, wherein the controller maintains, after restoring of data to the first storage area is complete, the second storage area in the second state.

17. The system according to claim 14, wherein the controller receives a read request issued by a host, and the controller reads, during restoring of data to the first storage area, data from one of the first and second storage areas in response to the read request.

18. The system according to claim 14, wherein the controller allows the second storage area to be accessed independently from the first storage area.

19. The system according to claim 14, wherein the controller performs an incremental restore of data from the second storage area to the first storage area.

20. The system according to claim 14, wherein the controller performs a full restore of data from the second storage area to the first storage area.

21. The system according to claim 18, wherein the controller assigns an address to a disk device associated with the second storage area, the second storage area being capable of being accessed through the address independently from an address of the first storage area.

22. The system according to claim 14, wherein the first storage area and second storage area are located on first and second disk drives of a storage system, respectively.

23. The system according to claim 14, wherein the controller includes:

means for placing the second storage area in the first state;

means for mirroring data from the first storage area to the second storage area;

means for changing the state of the second storage area from the first state to the second state; and

means for restoring data to the first storage area from the second storage area while maintaining the second storage area in the second state.

24. A computer readable medium encoded with a computer program that, when executed on a computer system, causes the computer system to perform a method comprising acts of:

placing a second storage area in a first state wherein updates to the first storage area are made to the second storage area;

mirroring data from the first storage area to the second storage area;

changing a state of the second storage area from the first state to a second state in which updates to the first storage area are not made to the second storage area; and

restoring data to the first storage area from the second storage area while maintaining the second storage area in the second state.

25. The computer readable medium according to claim 24, the computer program being further adapted to cause the computer to perform writing, only to the first storage area, any data received during the act of restoring.

26. The computer readable medium according to claim 24, the computer program being further adapted to cause the computer to perform maintaining, after the act of restoring is complete, the second storage area in the second state.

27. The computer readable medium according to claim 24, the computer program being further adapted to cause the computer to perform receiving, at the storage system, a read request issued by a host; and

reading, during the act of restoring, data from the second storage area in response to the read request if the data has not been restored to the first storage area.

28. The computer readable medium according to claim 24, wherein the act of changing further comprises allowing the second storage area to be accessed independently from the first storage area.

29. The computer readable medium according to claim 24, wherein the act of restoring includes performing an incremental restore of data from the second storage area to the first storage area.

30. The computer readable medium according to claim 24, wherein the act of restoring includes performing a full restore of data from the second storage area to the first storage area.

31. The computer readable medium according to claim 24, the computer program being further adapted to cause the computer to perform assigning an address to the second storage area, the second storage area being capable of being accessed through the address independently from an address of the first storage area.

32. The computer readable medium according to claim 24, wherein the first storage area and second storage area are respectively located on first and second logical volumes of a storage system.

33. The computer readable medium according to claim 24, the computer program being further adapted to cause the computer to perform indicating whether data has been restored to the first storage area from the second storage area.

34. The computer readable medium according to claim 24, the computer program being further adapted to cause the computer to perform restoring data read from the second storage area to the first storage area.

35. The computer readable medium according to claim 24, wherein at least one of the placing, mirroring, changing, and restoring acts is initiated by a command issued at a host computer.

36. The computer readable medium according to claim 24, the computer program being further adapted to cause the computer to perform updating after the restoring act is complete, data within the first storage area;

restoring, from the second storage area, data to replace the updated data within the first storage area.